In this response, Applicants traverse the §103(a) rejection. Applicants respectfully request reconsideration of the present application in view of the following remarks.

With regard to the §103(a) rejection, a proper *prima facie* case of obviousness requires that the cited references when combined must "teach or suggest all the claim limitations," and that there be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the references or to modify the reference teachings. See Manual of Patent Examining Procedure (MPEP), Eighth Edition, August 2001, §706.02(j).

Applicants submit that the Examiner has failed to establish a proper *prima facie* case of obviousness in the present §103(a) rejection, in that the Engstrom and Dent references, even if assumed to be combinable, fail to teach or suggest all the limitations of each of independent claims 1 and 26-34, and in that no cogent motivation has been identified for combining the references or for modifying the reference teachings to reach the claimed invention. Furthermore, even if it is assumed that a *prima facie* case has been established, there are teachings in one or more of the references that controvert the obviousness arguments of the Examiner.

Each of independent claims 1, 26 and 27 calls for transmission of at least one of an uplink access signal and an uplink timing synchronization signal from a mobile station to a base station in a particular one of a set of recurring intervals in which regular uplink data transmission from at least one additional mobile station to the base station is at least partially suspended.

It is important to note that the term "regular uplink data transmission" in the claimed invention is something other than the recited access signals or uplink timing synchronization signals. This is apparent from the claim language itself, as well as from the specification. For example, in the context of an illustrative embodiment, the specification at page 4, line 21, to page 5, line 3, states as follows:

> In accordance with the invention, mobiles transmit certain pre-specified, wideband timing and access signals in designated timing and access intervals. The timing and access intervals occur regularly within an uplink data stream, and all uplink data transmission is suspended during these intervals.

The timing and access intervals are dedicated in the sense that regular uplink data transmission is suspended in the intervals. The use of the dedicated intervals permits the data and timing to use different signaling, and prevents new mobiles that have not yet synchronized from interfering with synchronized data transmission.

FIG. 1 of the drawings illustrates, for this particular embodiment, an example of the claimed set of recurring intervals. Applicants note that this discussion of an illustrative embodiment is presented merely as one example of an arrangement falling within the claim language, and is not intended to limit the claim scope in any way. It should not be construed as an argument that certain elements of the illustrative embodiment constitute limitations of the claims.

The Examiner in formulating the §103(a) rejection acknowledges that Engstrom fails to meet this limitation of claims 1, 26 and 17. See the final Office Action at page 2, section 3. However, the Examiner argues that the limitation in question is met by the combined teachings of Engstrom and Dent. Applicants respectfully disagree. As will be described below, the Dent reference, like Engstrom, fails to meet the limitation in question.

The Examiner in support of the obviousness argument relies on the teachings in column 3, lines 31-67, of Dent. This portion of Dent provides as follows, with emphasis supplied:

In another aspect of the invention, a communication system including plural mobile radio telephone stations and at least one fixed base station is disclosed in which each mobile radio station has means for transmitting an access message initially at a relatively low power level; means for regulating the power level of said transmitting means; and control means for controlling said regulating means depending on whether said access message has been detected. The base station includes: means for receiving a composite of signals from said mobile stations; means for detecting mobile access messages; means for decoding detected access messages; and means for transmitting a reply message to the mobile station corresponding to detected access message.

The base station further includes means for ordering received signals that include access messages according to signal strength; means for selectively decoding the strongest

signals; and means for removing the decoded signal from the received composite signal. The mobile station includes means for encoding scrambled access messages using bi-orthogonal block codes and means for scrambling access messages using scrambling codes. The base station transmitting means broadcasts a list of reserve scrambling codes separate from scrambling codes used for other radio communications.

The mobile station includes means for adjusting the time of transmission of the access message based on regulated power level and means for detecting time alignment information in the reply message. The base station includes means for determining the difference between the signal strength of the random access message detected in the base station and a predetermined signal strength, and means for determining a time difference between the times the random access was detected and a predetermined time. Finally, the base station detecting means searches for particular access messages at staggered time intervals.

The relied-upon passage fails to teach or suggest the claimed transmission of at least one of an uplink access signal and an uplink timing synchronization signal from a mobile station to a base station in a particular one of a set of recurring intervals in which regular uplink data transmission from at least one additional mobile station to the base station is at least partially suspended. More specifically, there is no mention whatsoever in the relied-upon passage, or elsewhere in Dent, regarding suspension of regular uplink data transmission by one mobile station for a particular interval in which another mobile station transmits an uplink access signal. Regular uplink data transmission in Dent is referred to therein as transmission of traffic frames, and occurs for a given mobile station in a traffic channel specifically allocated to that mobile station, as described at column 16, lines 5-34, and column 17, lines 39-40. There is no suspension, partial or otherwise, of regular uplink data transmission in such an allocated traffic channel to allow transmission of an access signal by another mobile station.

Applicants note that Engstrom fails to supplement the above-described deficiencies of Dent. In fact, Engstrom not only fails to teach or suggest the limitation in question, but actively teaches away from it. The Engstrom reference is directed to a system which utilizes an entirely separate

random access channel to communicate an uplink access signal from a mobile station to a base station. Regular uplink data transmission between mobile stations and the base station in Engstrom occur in "other channels . . . that carry modulated information," such as the Dedicated Information Channel (DICH), as is stated in Engstrom, at page 6, lines 52-55. It can be seen in FIG. 6 of Engstrom that the random access channel (RACH) is entirely separate from the DICH channels of mobile stations denoted User 1 and User 2.

Other portions of Engstrom further illustrate the fact that the random access channel described therein is separate from the channels used for uplink data transmission. For example, Engstrom at page 6, lines 26-37 states as follows regarding the various types of random access channel that may be implemented, with emphasis supplied:

> The three types of random access channel are herein denoted as type 1, type 2 and type 3.
>
> A type 1 random access channel carries the random access sequence on all available sub-carriers. The m-sequence has a length of 511 symbols. This type of random access channel operates at very low SNR so that the random access does not disturb other traffic.
>
> A type 2 random access channel is similar to type 1 random access channel in that the m-sequence is placed on all sub-carriers. However, some of these sub-carriers are dedicated to the random access channel, and these are not available to other users, and use a higher power than the other sub-carriers.
>
> A type 3 random access channel uses only dedicated sub-carriers for the random access sequence. As in type 2 random access channel, dedicated sub-carriers are not available to other users so the SNR will be significantly better. The m-sequence will, however, be much shorter than the 511 symbol m-sequence used in the type 1 random access channel because only a limited number of sub-carriers are allocated to the random access channel.

Engstrom, by teaching the use of uplink random access channels that are entirely separate from the uplink data channels used for regular uplink data transmission, therefore actively teaches

away from the above-noted limitation of claims 1, 26 and 27 relating to transmission of an uplink access signal or an uplink timing synchronization signal from a mobile station to a base station in a particular one of a set of recurring intervals in which regular uplink data transmission from at least one additional mobile station to the base station is at least partially suspended. As described previously, the teachings of Dent also fail to meet this particular limitation of claims 1, 26 and 27, and are more properly viewed as teaching away from the claimed arrangements.

To summarize, both Engstrom and Dent teach to use a separate random access channel for transmission of uplink access signals. This is readily apparent from, for example, FIG. 6 in Engstrom, which shows the separate nature of the RACH used for random access signals and the DICH used for regular uplink data transmission, and column 16, lines 5-34, in Dent, which describes regular uplink data transmission occurring in assigned traffic channels separate from a channel used for random access. Accordingly, regular uplink data transmission occurs in channels other than the random access channel, and thus there is no need in Engstrom or Dent to at least partially suspend regular uplink data transmission from one mobile when another is sending a random access signal over the random access channel. Neither Engstrom nor Dent discloses or suggests that there is any type of suspension whatsoever in a respective DICH or traffic channel of a given mobile station while another mobile station transmits a random access signal. In fact, the Engstrom and Dent systems apparently use separate access and data transmission channels for the purpose of avoiding any interruption or other suspension in the regular uplink data transmission of one mobile station when another is transmitting an access signal.

Therefore, the collective teachings of Engstrom and Dent, if assumed for purposes of argument to be combinable, fail to meet the limitations of claims 1, 26 and 27. These claims are not obvious in view of the proposed combination.

The Examiner in the final Office Action at page 11, section 43, more specifically relies on the teachings in the above-quoted portion of Dent at column 3, lines 56-67. However, these teachings relate only to the operation of the random access channel in Dent, and not to regular uplink data transmission. As Applicants noted above, regular uplink data transmission in Dent occurs in assigned traffic channels, as described at column 16, lines 5-34. There is no teaching whatsoever in Dent regarding the suspension of regular uplink data transmission in a traffic channel allocated

to a given mobile station while another mobile station transmits an uplink access signal. This passage in Dent relied upon by the Examiner simply indicates that different mobile stations may transmit their respective access signals at different times, and this is not what is claimed. The claims at issue call for at least a partial suspension of regular uplink data transmission by one mobile station when, for example, another mobile station is transmitting an access signal. In the context of Dent, this would require at least partial suspension of regular uplink data transmission in the traffic channel assigned to one mobile station while another mobile station transmits an access signal. It is clear from the Dent reference that there is no such at least partial suspension of regular uplink data transmission disclosed therein.

With regard to motivation, the proposed combination of Engstrom and Dent appears to be based on a piecemeal reconstruction of the claimed invention, with the benefit of hindsight, rather than on any objective evidence in the references themselves.

More specifically, the Examiner at pages 2-3, section 4, of the final Office Action states as follows regarding motivation to combine Engstrom and Dent, with emphasis supplied:

> It would have been obvious to one of ordinary skill in the art to adapt to Engstrom's system Dent's random access method to avoid interference in the system.

The Federal Circuit has stated that when patentability turns on the question of obviousness, the obviousness determination "must be based on objective evidence of record" and that "this precedent has been reinforced in myriad decisions, and cannot be dispensed with." In re Sang-Su Lee, 277 F.3d 1338, 1343 (Fed. Cir. 2002). Moreover, the Federal Circuit has stated that "conclusory statements" by an examiner fail to adequately address the factual question of motivation, which is material to patentability and cannot be resolved "on subjective belief and unknown authority." Id. at 1343-1344. There has been no showing in the present §103(a) rejection of objective evidence of record that would motivate one skilled in the art to combine Engstrom and Dent, or to modify their teachings to reach the particular limitations in question. The statement of obviousness given by the Examiner in the final Office Action is precisely the type of subjective, conclusory statement that the Federal Circuit has indicated provides insufficient support for an obviousness rejection.

In addition, both Engstrom and Dent individually provide uplink random access techniques that when applied to a given mobile station do not involve any partial or complete suspension of regular uplink data transmission from any other mobile station. This is directly contrary to the claimed invention. Applicants respectfully submit that each of the references teaches away from the claimed invention. Thus, even if it is assumed that a proper *prima facie* case has been established, there are particular teachings in the references which controvert the obviousness argument put forth by the Examiner.

Independent claims 28-34 include limitations that are similarly not met by the proposed combination of Engstrom and Dent, and are believed allowable for substantially the same reasons identified above with regard to claims 1, 26 and 27.

Dependent claims 2-4, 6-14, 16, 17, 20 and 25 are believed allowable at least by virtue of their dependence from independent claim 1. These claims are also believed to define additional separately-patentable subject matter relative to the proposed combination of Engstrom and Dent.

For example, dependent claim 9 specifies that, in order to gain access, the mobile station transmits, in a timing and access interval, one of a set of designated access signals which are common for and known to all mobile stations attempting access to the base station. The Examiner relies generally on the teachings in column 3 of Dent as allegedly disclosing this limitation, but there is no suggestion therein, or in Engstrom, regarding a timing and access interval as claimed. An illustrative embodiment of a timing and access interval of the type claimed was described above in conjunction with the reference to FIG. 1 of the drawings.

As another example, dependent claim 10 specifies that in each of a plurality of timing and access intervals, the base station searches for the presence of a transmitted access signal to determine if a mobile station is attempting access, and after detecting an access, utilizes control logic to determine whether the access can be granted. Again, the Examiner relies generally on the teachings in column 3 of Dent as allegedly disclosing this limitation, but there is no suggestion therein, or in Engstrom, regarding a timing and access interval as claimed.

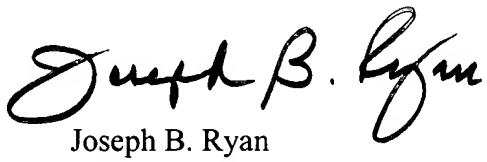
As yet another example, dependent claim 16 specifies that, in response to a negative acknowledgment or the lack of an acknowledgment, the mobile station is operative to retransmit an access signal in a later timing and access interval. The Examiner relies generally on the teachings

in columns 7 and 8 of Dent as allegedly disclosing this limitation, but there is no suggestion therein, or in Engstrom, regarding a timing and access interval as claimed.

In view of the above, Applicants believe that claims 1-34 are in condition for allowance, and respectfully request withdrawal of the §103(a) rejection.

As indicated previously, a Notice of Appeal is submitted concurrently herewith.

Respectfully submitted,



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Enclosure(s): Notice of Appeal